F·A·A·M facility for airborne atmospheric measurements

FLIGHT FOLDER

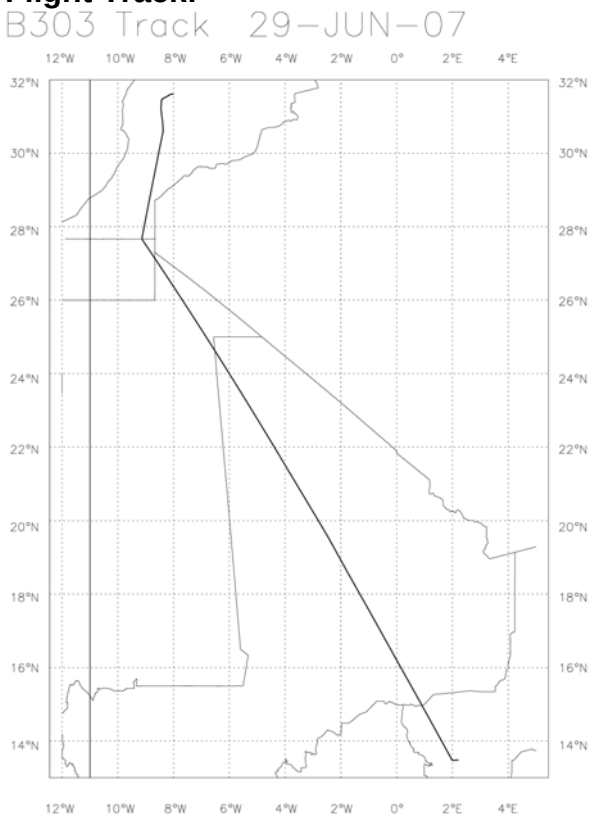
Flight No.:	B303
Date:	29 June 2007
Take Off	07:57:30
Landing:	11:45:46
Flight Time	3h 48m 16s

Campaign: GERBIL

Operating Area: Niamey -> Marrakesh

POB	Position	Name	Institute
1	Captain	Alan Roberts	Directflight
2	Co-pilot	Steve Ball	FAAM
3	CCM2	Dawn Quinn	Directflight
4	Core chem.	Kate Turnbull	FAAM
5	Flight Manager	Jim Crawford	FAAM
6	Mission scientist 2	Jim Haywood	Met Office
7	Mission scientist 1	Ben Johnson	Met office
8	AVAPS	Doug Anderson	FAAM
9	Filters	Paula Formenti	Paris
10	ARIES	Stuart Rogers	Met office
11	CCM1	Jackie Mulholland	Directflight
12	Neph / PSAP / SWS	Andy Wilson	Met Office
13	Cloud Physics	Martyn Pickering	Met Office
14	transit	Jamie Trembath	FAAM
15	transit	Ian Ramsay-Rae	Directflight
16	transit	John Kitchen	Avalon
17	transit	Mark Lancashire	Avalon

Flight Track:

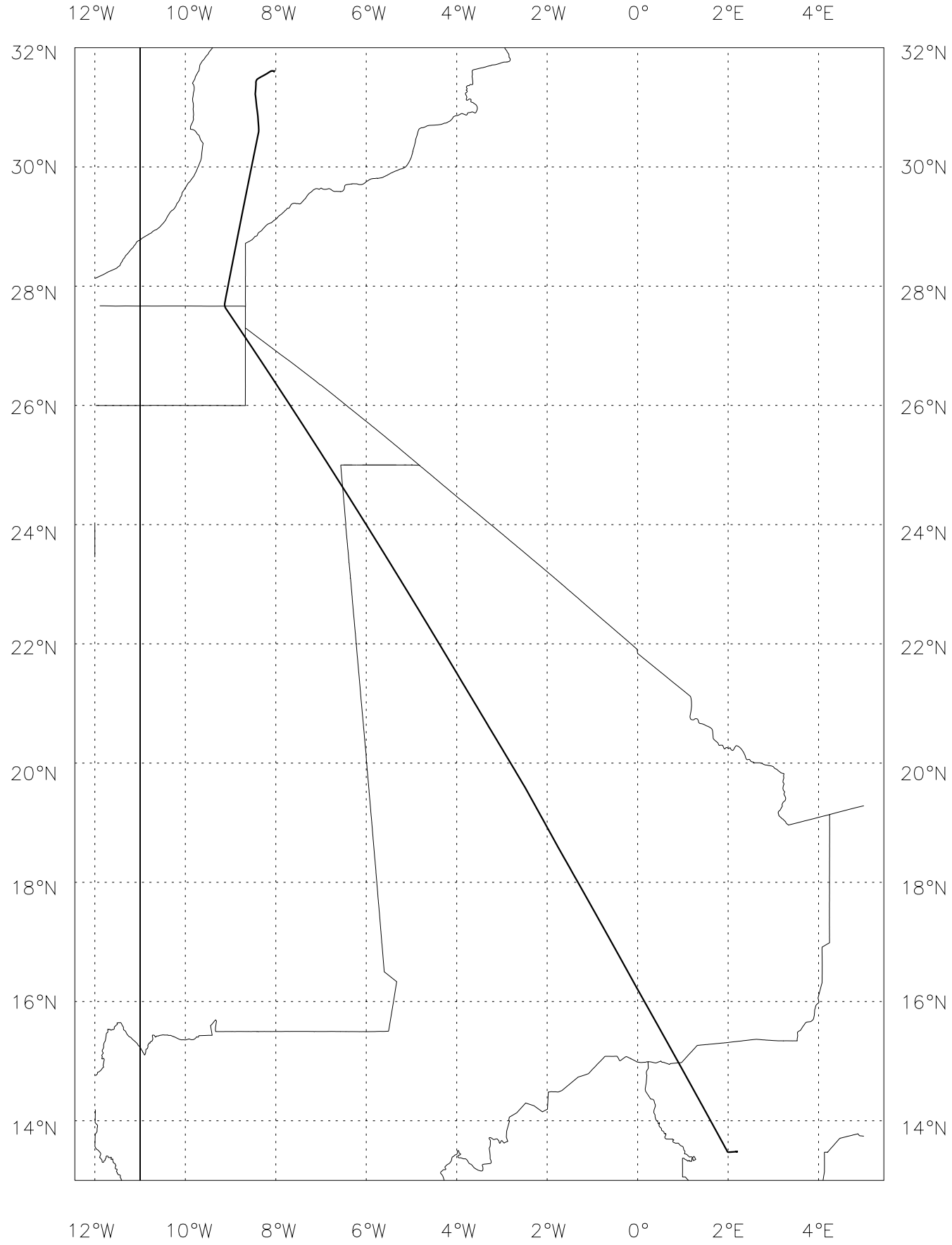


FLIGHT SUMMARY

Flight No B303
Date:
Project:
Location:

Start Time	End Time	Event	Height (s)	Hdg	Comments
074619		inu	0.72 kft	098	to nav
074628		gin	0.72 kft	098	on
074643		cgps	0.71 kft	098	b303cgps.log
075730		T/O	0.69 kft	267	Niamey
075742	082200	Profile 1	0.81 - 24.0 kft	263	
075848		heimann	1.8 kft	264	open
075926		!	2.3 kft	264	P1 start as T/O
080406		Video	7.2 kft	328	#1 aft, #2 down
082200	085900	Run 1.1	24.0 kft	327	sonde 2
082303		bbr	24.0 kft	326	retract
082413		heimann	24.0 kft	327	cal 10
083959		Sonde 1	24.0 kft	328	
085900	091212	Profile 2	24.0 - 10.0 kft	329	sonde 2
090006		bbr	21.8 kft	329	extend
090017		heimann	21.6 kft	329	cal 10
091213	094220	Run 2.1	10.0 kft	329	
091642		bbr	10.0 kft	331	retract
093247		Video	10.0 kft	329	#3 aft, #4 down; start
094220	095950	Profile 3	10.0 - 26.0 kft	328	
094236		bbr	10.2 kft	329	extend
094249		heimann	10.3 kft	328	cal 14
095950	113101	Run 3.1	26.0 kft	325	
100002		Sonde 3	26.0 kft	325	
100041		bbr	26.1 kft	325	retract
103409		Sonde 4	26.0 kft	321	
105919		heimann	26.0 kft	318	cal 14
110250		Video	26.0 kft	318	#5 aft, #6 down; start
113101	113438	Profile 4	26.0 - 18.8 kft	352	at land
113121		bbr	26.0 kft	351	extend
113254		CO	23.2 kft	350	calibrations run on descent
114546		Land	1.4 kft	094	Marrakesh

B303 Track 29-JUN-07



Mission scientist debrief

B303 – GERBILS flight Niamey to Marakesh

Location

Over the central-western Sahara

Mission aims

Radiative effect of Saharan dust over North Africa. Insitu sampling of Saharan dust aerosol. Surface characterization. CAMM dust forecast validation.

Weather

Some mid and high level cloud around Niamey. Clearing up further north and completely clear from 20N onwards.

Flight plans

No pirouettes. Take off 8Z from Niamey. Profile ascent to FL240 light-moderate fine aerosol in BL, thought to be mixture of pollution and organic aerosol. Dust was present above 7000ft and upto FL170 but optical depth was on the low side (0.3 uncorrected unbodged). A 40min run at FL240 was mostly clear of cloud with moderate dust below, although surface was still visibile. A sonde was dropped midway and at the end of the run. A descent was made to FL100, followed by a 30min run at that level. Neph was 40-80Mm-1, a single filter sample was taken. Profile up to FL260 followed by a long run to Marakesh. A non-profile descent was made into Marakesh. The dust was generally thickest below around 20N as predicted by CAMM. The dust thinned out progressively further north and visibility was high on reaching Morocco. Large variations in albedo along the way.

0.17
~~0.23~~
0.33

Mission Scientist's Log

Flight No **B**.303. Date 29/6/07 Name Ben Johnson Page 1 of 2

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
075730	T/O			NIAMEY	Altocumulus 3/8
					1/8 cirrus
					T = 30°C Tdew = 20°C
075742	P1	SFC			
082200	Gnd	FL240			
082200	R1.1	"		14.9N, 1E	Mostly ~~free~~ from cloud above and below once run started, just few wisps to the southeast ~~and~~ of cirrus and altocumulus
↑ FL180					
			FL040		Dust doesn't seem that thick here can still see ground reasonably well from a window seat.
			FL070		
			→		
					$\tau_{aerosol} \sim 0.3$ on P1
					Forecast for dust to be increasing as we head north
083951	Sonde 1	"		16.4N 0.2W	
08 ~~5730~~	Sonde 2	FL240			
08 5802	End R1.1	"			
085802	P2	"			
091213	End	FL100			
091213	R2.1	FL100		19N 2.1W	Neph ~ 75 Mm^{-1}
					Looks like quite a bit of dust below, though variable.

Mission Scientist's Log

Flight No **B**..303.. Date 29/6/07 Name Ben Johnson Page 2 of 2
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GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
092500		FL100	325		Thin Cirrus clouds starting to
					come overhead
092500					Dust scattering decreasing
					to 35 Mm^{-1}
		PSAP	LIN	ABS COEFF	~ 22 Mm^{-1} ? It's rubbish
094220	End R2.1			20.8N 3.4W	
094220	P3	FL100			
094940		FL170			Dust top at FL170
					accelerating above science
					speed.
095000					& Just a few tiny patches
This Flight might be useful					of cirrus up here now
for high-level radiation					Dust doesn't look that
work + ~30min SLR					thick below compared to
in dust at FL100.					expectation from CAMM forecast
1 Profile out of Niamey.					Does CAMM overdo the
					S. Algeria dust source?
095950	R3.1			22N 4.4W	
095950	End P3	FL260	325		Cloud free -
100002					Dust not that thick below
					can still see the surface
					from a window seat.
					Variable O_3
					Variable albedo below. Higher
			FL260		albedo also corresponds to visually whiter surface rather than orange.

1035:sh sonde 4 @ 25N. Rapid descent into Marrakesh

CLOUD PHYSICS LOG Flight B 303

Date: 29/06/07	Operator: MAP	DRS Time: 07:15:00	DAU1 Time: +0	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 1 of 1

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
07:57:30																	Start P1 from takeoff
08:00:11	Noise		2	10	1												FL030
08:01:20	Noise			15	2												FL040
08:02:14	Noise			15	3												FL050
08:03:03	Noise			30	3												FL060
08:04:10	Noise			120	10												FL070
08:05:02	Noise			100	10												FL080
08:05:57	Noise		Fail	100	3												FL090
08:06:58	Noise			10	3												FL100
08:07:41	Noise			10	2												FL110
08:18:35	Noise		0	15	2												FL120
08:09:30	Noise		Fail	20	2												FL130
08:10:27	Noise			5	1												FL140
08:11:30	Noise			5	1												FL150
08:12:20	Noise			5	1												FL160 PCASP heater on
08:13:21	Noise			5	1												FL170
08:14:40	Noise			3	1												FL180
08:16:00	Noise			1													FL190
08:17:05	Noise			1	1												FL200
08:18:10	Noise			1	1												FL210
08:19:20	Noise			1	1												FL220
08:20:45	Noise		0	1	1												FL230
08:22:00	Noise																End of P1 & Start Run 1.1 @ FL240
08:25:00	Noise			1													
08:30:00	Noise																
08:35:00	Noise																
08:40:00	Noise																
08:45:00	Noise																
08:50:00	Noise																
08:55:00	Noise																
08:58:22																	End of Run 1.1 & Start P2
08:59:16	Noise																FL230
08:59:56	Noise																FL220
09:00:50	Noise		1	1	1												FL210
09:01:49	Noise																FL200
09:03:00	Noise																FL190
09:04:17	Noise																FL180
09:05:00	Noise			10	2												FL170
09:05:58	Noise			10	2												FL160
09:07:00	Noise			10	2												FL150
09:08:02	Noise			20	3												FL140
09:09:04	Noise			50	3												FL130
09:10:09	Noise			60	3												FL120
09:11:14	Noise			60	3												FL110
09:12:13																	End of P3 & Start Run 2.1 @ FL100
09:13:00	Noise		2	70	3												

CLOUD PHYSICS LOG Flight B 303

Date: 29/06/07	Operator: MAP	DRS Time: 07:15:00	DAU1 Time: +0	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 2 of 2

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
09:15:00	Noise		3	70	3												Problems with registry on SID1 computer
09:17:00	Noise		Fail	50	3												
09:19:00	Noise			30	3												
09:21:00	Noise		0	20	3												
09:23:00	Noise			20	3												
09:25:00	Noise			15	3												
09:30:00	Noise			10	3												
09:35:00	Noise			10	3												
09:40:00	Noise			10	3												
09:42:19																	End of Run 2.1 & Start P4 from FL100
09:43:45	Noise		1	10	3												FL110
09:44:48	Noise			10	1												FL120
09:45:46	Noise			15	3												FL130
09:46:44	Noise			10	2												FL140
09:47:44	Noise			10	2												FL150
09:48:38	Noise			10	2												FL160
09:49:38	Noise			1													FL170
09:50:59	Noise																FL180
09:52:06	Noise																FL190
09:53:08	Noise																FL200
09:54:15	Noise																FL210
09:55:14	Noise																FL220
09:56:22	Noise																FL230
09:47:54	Noise																FL240
09:58:40	Noise																FL250
09:59:50																	End of P4 & Start Run 3.1 @ FL260
10:00:00	Noise																
10:05:00	Noise		2														
10:10:00	Noise					Noisy											
10:15:00	Noise			1		Noise											
10:20:00	Noise					Off											2D2-C switched off to stop noise images
10:25:00	Noise																
10:30:00	Noise			1													
10:35:00	Noise																
10:40:00	Noise																
10:45:00	Noise		3	1													
10:50:00	Noise																
10:55:00	Noise			1													
11:00:00	Noise																
11:05:00	Noise		Fail														
11:10:00	Noise																
11:15:00	Noise																
11:20:00	Noise																
11:25:00	Noise																
11:30:00	Noise																
11:31:01																	End of Run 3.1 & Start P5

CLOUD PHYSICS LOG Flight B 303

Date: 29/06/07	Operator: MAP	DRS Time: 07:15:00	DAU1 Time: +0	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 3 of 3

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
11:32:10	Noise																FL250
11:32:50	Noise					On											FL240
11:33:11	Noise																FL230
11:33:30	Noise																FL220
11:33:50	Noise																FL210
11:34:09	Noise																FL200
11:34:35	Noise																FL190
11:35:00	Noise																FL180
11:35:22	Noise																FL170
11:35:53	Noise																FL160
11:36:30	Noise																FL150
11:36:50	Noise																FL140
11:37:22	Noise																FL130
11:37:50	Noise																FL120
1138:20	Noise																FL110
11:38:55	Noise																FL100
11:39:15	Noise																FL090
11:39:48	Noise			5													FL080
11:40:06	Noise			5													FL070
11:40:53	Noise																FL060
11:41:15	Noise																FL050
	PCASP1 Flowrate = 0.8CC/SEC Some channel 1 noise due to low Vref FFSSP suffered many overrun errors 2D2-C switched off for a while at high altitude to avoid too many false images due to the cold and low end element voltages																

FAAM Dropsonde Flight Log

Flight No.	B303	**Date**	29 Jun 2007	**Operator**	Doug Anderson	**Page No.**	1 of 1

GMT	**Sonde No.**	**Event** *eg land, splashdown*	**Comments** *pressure hPa, T deg C, RH %, wind direction deg, wind speed m/s,* ***longitude, latitude****, height m*
08:40:03	1	Launch	392.40 -16.40 5.91 94.60 15.10 -14.80 **-0.194300 16.468900** 7320.10
08:49:19	1	Land	977.97 31.99 49.89 225.75 10.19 -12.01 **-0.217028 16.483560** -162.65
08:58:03	2	Launch	392.60 -15.70 6.50 91.90 20.60 -17.20 **-1.339700 18.026100** 7317.60
09:07:28	2	Land	976.14 33.33 45.60 210.48 8.76 -11.99 **-1.376143 18.045268** 99999.00
10:00:03	3	Launch	359.40 -20.50 7.09 93.40 8.00 -16.40 **-4.423300 22.045700** 7934.60
10:09:49	3	Land	978.00 39.00 5.99 38.25 9.06 -12.34 **-4.464169 22.050793** -271.67
10:34:12	4	Launch	359.60 -20.80 6.21 227.70 3.50 -14.70 **-6.839400 25.007100** 7929.70
10:43:46	4	Land	975.85 33.86 15.12 344.46 5.17 -12.12 **-6.827846 25.025385** -230.68

Filter Sampling Log

Flight No: B303 **Date:** 29 JUN 2007 **Operator:** PFO

Type of filters mounted in	Top inlet	47 mm Nuclepore (0.4 µm pore size)	Bottom inlet	47 mm Nuclepore (0.4 µm pore size)

Run No	Disk #1 TOP	Disk #2 MIDDLE	Disk #3 BOTTOM	Inlet Top/ Bottom	Time On	Time Off	Flight Run	Accum Vol [l]	Comments
Filters run1	F9	----	----	Bottom	09:12:13	09:42:20	R2.1	602	R2.1 FL100, sigma_scatt ~80 Mm-1 @19°N 2.1°W, sigma_scatt ~40 Mm-1 @20.7°N 3.4°W
Filters run1	F10	----	----	Top	10:43:00	11:13:09	R2.1/R3.1	1108	

NOTE: F9 and F10 not pre-weighed

B303_SWS_SHIMS_EventLog.txt

07:17:49.34	---	-	-	-	-	
07:17:49.34	---	-	-	-	-	+++ SOFTWARE START/RESTART +++
07:17:49.34	---	-	-	-	-	+++ hh:mm:ss.ff / Instr / Posn / Period / tVIS/ tNIR / Comment +++
07:17:49.34	---	-	-	-	-	+++ Flight no. B303
07:17:49.34	---	-	-	-	-	
07:18:01.65	SWS	-	-	-	-	Initialization: VIS OK NIR OK
07:18:03.44	USH	-	-	-	-	Initialization: VIS OK NIR OK
07:18:05.58	LSH	-	-	-	-	Initialization: VIS OK NIR OK
07:18:10.39	---	-	-	-	-	Reset shutters.
07:18:13.59	---	-	-	-	-	Reset shutters.
07:18:25.31	SWS	-	-	400	-	VIS int.time changed from 10ms to 400ms.
07:18:28.39	SWS	-	-	-	500	NIR int.time changed from 10ms to 500ms.
07:18:31.81	USH	-	-	400	-	VIS int.time changed from 10ms to 400ms.
07:18:34.53	USH	-	-	250	-	VIS int.time changed from 400ms to 250ms.
07:18:36.76	USH	-	-	-	300	NIR int.time changed from 10ms to 300ms.
07:18:40.08	USH	-	-	100	-	VIS int.time changed from 250ms to 100ms.
07:18:43.31	LSH	-	-	750	-	VIS int.time changed from 10ms to 750ms.
07:18:45.88	LSH	-	-	-	750	NIR int.time changed from 10ms to 750ms.
07:18:48.49	SWS	-	-	-	-	Manual scene recording started.
07:18:48.49	LSH	-	-	-	-	Manual scene recording started.
07:18:48.49	USH	-	-	-	-	Manual scene recording started.
07:18:54.83	LSH	-	-	-	-	Dark measurement started.
07:18:54.92	SWS	-	-	-	-	Dark measurement started.
07:18:54.98	USH	-	-	-	-	Dark measurement started.
07:18:58.67	USH	-	-	-	-	Manual scene recording started.
07:19:00.47	SWS	-	-	-	-	Manual scene recording started.
07:19:02.24	SWS	-	-	-	-	Idling
07:19:02.77	LSH	-	-	-	-	Manual scene recording started.
07:19:09.21	SWS	-	-	-	-	Manual scene recording started.
07:19:12.03	SWS	-	-	-	-	Idling
07:19:14.04	USH	-	-	-	-	Idling
07:19:16.11	LSH	-	-	-	-	Idling
07:19:33.51	---	-	-	-	-	*** preflight ok..all to idle
07:19:49.26	---	-	-	-	-	*** sws to 90AFT for take off
07:53:04.95	SWS	-	-	-	-	Manual scene recording started.
07:53:04.95	LSH	-	-	-	-	Manual scene recording started.
07:53:04.96	USH	-	-	-	-	Manual scene recording started.
07:53:14.26	USH	-	-	200	-	VIS int.time changed from 100ms to 200ms.
07:53:18.85	USH	-	-	150	-	VIS int.time changed from 200ms to 150ms.
07:53:22.93	USH	-	-	-	500	NIR int.time changed from 300ms to 500ms.
07:53:49.06	LSH	-	-	-	-	Dark measurement started.
07:53:49.18	USH	-	-	-	-	Dark measurement started.
07:53:49.45	SWS	-	-	-	-	Dark measurement started.
07:53:52.84	---	-	-	-	-	Reset shutters.
07:53:54.73	USH	-	-	-	-	Manual scene recording started.
07:53:54.96	SWS	-	-	-	-	Manual scene recording started.
07:53:57.00	LSH	-	-	-	-	Manual scene recording started.
07:53:58.06	SWS	-	-	-	-	Dark measurement started.
07:54:01.33	USH	-	-	-	-	Dark measurement started.
07:54:03.50	SWS	-	-	-	-	Manual scene recording started.
07:54:05.70	LSH	-	-	-	-	Dark measurement started.
07:54:06.77	USH	-	-	-	-	Manual scene recording started.
07:54:13.64	LSH	-	-	-	-	Manual scene recording started.
08:01:33.65	SWS	174R	-	-	-	Telescope position set to 174R
08:04:36.96	SWS	-	-	300	-	VIS int.time changed from 400ms to 300ms.
08:04:42.57	SWS	-	-	200	-	VIS int.time changed from 300ms to 200ms.
08:04:45.15	SWS	-	-	-	350	NIR int.time changed from 500ms to 350ms.
08:04:50.10	LSH	-	-	-	-	Dark measurement started.
08:04:50.46	SWS	-	-	-	-	Dark measurement started.
08:04:50.47	USH	-	-	-	-	Dark measurement started.
08:04:54.43	SWS	-	-	-	-	Manual scene recording started.
08:04:56.09	USH	-	-	-	-	Manual scene recording started.
08:04:58.03	LSH	-	-	-	-	Manual scene recording started.
08:05:38.37	---	-	-	-	-	*** in P1 climb out of Niamey passing FL090
08:05:43.85	USH	-	-	75	-	VIS int.time changed from 150ms to 75ms.
08:05:47.80	USH	-	-	-	-	Dark measurement started.

08:05:53.26	USH	-	-	-	-	Manual scene recording started.
08:14:08.09	---	-	-	-	-	*** in and above cloud
08:14:37.24	---	-	-	-	-	*** and cloud above too
08:17:57.23	LSH	-	-	400	-	VIS int.time changed from 750ms to 400ms.
08:18:06.61	SWS	-	-	75	-	VIS int.time changed from 200ms to 75ms.
08:18:09.80	SWS	-	-	-	200	NIR int.time changed from 350ms to 200ms.
08:18:14.70	USH	-	-	-	-	Dark measurement started.
08:18:14.88	LSH	-	-	-	-	Dark measurement started.
08:18:14.96	SWS	-	-	-	-	Dark measurement started.
08:18:17.53	SWS	-	-	-	-	Manual scene recording started.
08:18:20.13	USH	-	-	-	-	Manual scene recording started.
08:18:22.84	LSH	-	-	-	-	Manual scene recording started.
08:18:39.07	---	-	-	-	-	*** clear above and cloud below
08:22:39.10	---	-	-	-	-	*** end profile 1 start R1.1 at FL240
08:24:54.44	SWS	-	-	150	-	VIS int.time changed from 75ms to 150ms.
08:24:57.02	SWS	-	-	-	350	NIR int.time changed from 200ms to 350ms.
08:25:03.94	USH	-	-	100	-	VIS int.time changed from 75ms to 100ms.
08:25:07.72	SWS	-	-	-	-	Dark measurement started.
08:25:07.95	USH	-	-	-	-	Dark measurement started.
08:25:08.37	LSH	-	-	-	-	Dark measurement started.
08:25:11.69	SWS	-	-	-	-	Manual scene recording started.
08:25:13.39	USH	-	-	-	-	Manual scene recording started.
08:25:16.32	LSH	-	-	-	-	Manual scene recording started.
08:41:03.86	---	-	-	-	-	*** no cloud below and still clear above
08:51:54.53	---	-	-	-	-	*** clear below with good dust
08:59:15.70	---	-	-	-	-	*** end run 1.1 start profile 2
08:59:48.10	---	-	-	-	-	*** in descent so SWS to 177 AFT
08:59:57.31	LSH	-	-	300	-	VIS int.time changed from 400ms to 300ms.
09:00:05.65	SWS	-	-	100	-	VIS int.time changed from 150ms to 100ms.
09:00:08.59	SWS	-	-	-	300	NIR int.time changed from 350ms to 300ms.
09:00:10.17	LSH	-	-	-	-	Dark measurement started.
09:00:10.47	SWS	-	-	-	-	Dark measurement started.
09:00:10.47	USH	-	-	-	-	Dark measurement started.
09:00:13.94	SWS	-	-	-	-	Manual scene recording started.
09:00:16.10	USH	-	-	-	-	Manual scene recording started.
09:00:18.11	LSH	-	-	-	-	Manual scene recording started.
09:05:14.86	---	-	-	-	-	*** in dust layer at FL169
09:12:13.79	---	-	-	-	-	*** end p2 start r2.1 at Fl100
09:16:01.88	---	-	-	-	-	*** sws to 174 during this run
09:19:23.54	USH	-	-	-	-	Dark measurement started.
09:19:23.72	LSH	-	-	-	-	Dark measurement started.
09:19:23.75	SWS	-	-	-	-	Dark measurement started.
09:19:27.42	SWS	-	-	-	-	Manual scene recording started.
09:19:29.12	USH	-	-	-	-	Manual scene recording started.
09:19:31.76	LSH	-	-	-	-	Manual scene recording started.
09:27:38.58	---	-	-	-	-	*** thin cirrus above
09:32:38.32	---	-	-	-	-	*** red sandy desert below visible through light dust
09:37:11.57	USH	-	-	-	-	Dark measurement started.
09:37:11.62	SWS	-	-	-	-	Dark measurement started.
09:37:12.01	LSH	-	-	-	-	Dark measurement started.
09:37:15.33	SWS	-	-	-	-	Manual scene recording started.
09:37:17.12	USH	-	-	-	-	Manual scene recording started.
09:37:19.95	LSH	-	-	-	-	Manual scene recording started.
09:41:54.48	---	-	-	-	-	*** end of r2.1 and start of P3 ascent
09:43:31.32	---	-	-	-	-	*** SWS to 172 AFT for climb
09:48:24.75	USH	-	-	75	-	VIS int.time changed from 100ms to 75ms.
09:48:32.06	LSH	-	-	-	-	Dark measurement started.
09:48:32.40	USH	-	-	-	-	Dark measurement started.
09:48:32.45	SWS	-	-	-	-	Dark measurement started.
09:48:36.03	SWS	-	-	-	-	Manual scene recording started.
09:48:37.83	USH	-	-	-	-	Manual scene recording started.
09:48:40.03	LSH	-	-	-	-	Manual scene recording started.
09:50:57.26	---	-	-	-	-	*** above dust layer at FL170
09:51:19.04	---	-	-	-	-	*** scattered cirrus patches above
09:51:40.48	SWS	174R	-	-	-	Telescope position set to 174R
10:00:09.40	---	-	-	-	-	*** end p3
10:01:22.59	---	-	-	-	-	*** in r3.1 at FL260
10:01:39.66	---	-	-	-	-	*** clear abobe

10:01:45.86	---	-	-	-	-	*** above
10:02:15.48	---	-	-	-	-	*** sws to 176 aft aircraft pich 4 degrees
10:02:22.71	LSH	-	-	-	-	Dark measurement started.
10:02:22.74	SWS	-	-	-	-	Dark measurement started.
10:02:23.06	USH	-	-	-	-	Dark measurement started.
10:02:26.55	SWS	-	-	-	-	Manual scene recording started.
10:02:28.63	USH	-	-	-	-	Manual scene recording started.
10:02:30.67	LSH	-	-	-	-	Manual scene recording started.
10:16:12.83	SWS	-	-	-	200	NIR int.time changed from 300ms to 200ms.
10:16:17.32	USH	-	-	-	-	Dark measurement started.
10:16:17.69	SWS	-	-	-	-	Dark measurement started.
10:16:17.87	LSH	-	-	-	-	Dark measurement started.
10:16:20.16	SWS	-	-	-	-	Manual scene recording started.
10:16:22.80	USH	-	-	-	-	Manual scene recording started.
10:16:25.84	LSH	-	-	-	-	Manual scene recording started.
10:45:01.96	LSH	-	-	-	-	Dark measurement started.
10:45:02.10	USH	-	-	-	-	Dark measurement started.
10:45:02.10	SWS	-	-	-	-	Dark measurement started.
10:45:04.80	SWS	-	-	-	-	Manual scene recording started.
10:45:08.12	USH	-	-	-	-	Manual scene recording started.
10:45:09.92	LSH	-	-	-	-	Manual scene recording started.
11:07:01.42	USH	-	-	-	400	NIR int.time changed from 500ms to 400ms.
11:07:04.45	USH	-	-	50	-	VIS int.time changed from 75ms to 50ms.
11:07:07.86	USH	-	-	-	-	Dark measurement started.
11:07:12.30	USH	-	-	-	-	Manual scene recording started.
11:29:35.56	USH	-	-	-	-	Dark measurement started.
11:29:35.73	SWS	-	-	-	-	Dark measurement started.
11:29:35.77	LSH	-	-	-	-	Dark measurement started.
11:29:38.21	SWS	-	-	-	-	Manual scene recording started.
11:29:40.00	USH	-	-	-	-	Manual scene recording started.
11:29:43.92	LSH	-	-	-	-	Manual scene recording started.
11:38:11.51	---	-	-	-	-	*** data stop for landing
11:38:18.72	---	-	-	-	-	*** sws to 90aft
11:38:23.59	SWS	-	-	-	-	Dark measurement started.
11:38:23.64	LSH	-	-	-	-	Dark measurement started.
11:38:23.86	USH	-	-	-	-	Dark measurement started.
11:38:26.03	SWS	-	-	-	-	Manual scene recording started.
11:38:27.28	SWS	-	-	-	-	Dark measurement started.
11:38:28.44	USH	-	-	-	-	Manual scene recording started.
11:38:29.73	SWS	-	-	-	-	Manual scene recording started.
11:38:30.22	USH	-	-	-	-	Dark measurement started.
11:38:30.45	SWS	-	-	-	-	Dark measurement started.
11:38:31.73	LSH	-	-	-	-	Manual scene recording started.
11:38:32.89	SWS	-	-	-	-	Manual scene recording started.
11:38:34.67	USH	-	-	-	-	Manual scene recording started.
11:38:38.01	USH	-	-	-	-	Idling
11:38:38.12	LSH	-	-	-	-	Idling
11:38:38.33	SWS	-	-	-	-	Idling

ARIES flight log

	Flight: B303		page 1 of
Date:	Operator(s): S ROGERS	Res: 1	Gain A: 2 B: 2
Loc./Notes:			

Scans: *either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]".* ***View:*** *mirror angle.*

DRS time	Flt ptrn	Scans	View	Shtr	HBB	CBB	Comments
07 22 20	On the pan	1x60	CH	C	81	41	Script 1 (CBB 1x60; HBB 1x60)
~0800	TAKEOFF						
08 22 15	FL240	1x60	CH	C	71	41	
08 23 30		480x1	N	C	71	41	Dusty below, but surface visible.
08 27 34		1x60	CH	C	71	41	
08 28 50		480x1	N	C	71	41	
08 32 52		1x60	CH	C	71	41	
08 34 10		480x1	N	C	71	41	
08 38 11		1x60	CH	C	71	41	
08 39 36		480x1	N	C	71	41	
08 43 41		1x60	CH	C	71	41	
08 44 55		480x1	N	C	71	41	
08 48 58		1x60	CH	C	71	41	
08 50 14		480x1	N	C	71	41	
08 54 14		1x60	CH	C	71	41	
08 55 27		480x1	N	C	71	42	Aborted at end of run.
08 58 27	↓	1x60	CH	C	70	41	
09 12 13	FL100	1x60	CH	C	71	41	
09 13 29		480x1	N	C	71	41	
09 17 33		1x60	CH	C	71	41	
09 18 47		480x1	N	C	71	41	Dusty - surface barely visible.
09 22 50		1x60	CH	C	71	41	
09 24 01		480x1	N	C	71	41	Surface slightly more visible. Sand dunes
09 28 01		1x60	CH	C	71	41	
09 29 16		480x1	N	C	71	40	
09 33 20		1x60	CH	C	71	41	
09 34 44		480x1	N	C	71	41	
09 38 45		1x60	CH	C	71	41	
09 39 59		240x1	N	C	71	41	
09 42 00	↑	1x60	CH	C	71	41	

ARIES flight log

Flight: B303	page 2 of
Date:	Operator(s):	Res:	Gain A: B:
Loc./Notes:	

Scans: *either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]".* ***View:*** *mirror angle.*

DRS time	Flt ptrn	Scans	View	Shtr	HBB	CBB	Comments
09 59 50	FL240	1×60	CH	C	71	41	
10 01 03		480×1	N	C	71	41	Above dust. Surface visible. Clear above.
10 05 07		1×60	CH	C	71	41	
10 06 22		480×1	N	C	71	41	
10 10 24		1×60	CH	C	71	41	
10 11 37		480×1	N	C	71	41	
10 15 38		1×60	CH	C	71	41	
10 16 54		480×1	N	C	71	41	
10 20 57		1×60	CH	C	71	41	
10 22 12		480×1	N	C	71	41	
10 26 14		1×60	CH	C	71	41	
10 27 33		480×1	N	C	71	41	
10 31 34		1×60	CH	C	71	41	
10 32 51		480×1	N	C	71	41	
10 36 51		1×60	CH	C	71	41	
10 38 05		480×1	N	C	71	41	
10 42 06		1×60	CH	C	71	41	
10 43 25		480×1	N	C	71	41	
10 47 28		1×60	CH	C	71	41	
10 48 43		480×1	N	C	71	41	
10 52 44		1×60	CH	C	71	41	Surface more clearly visible.
10 54 47		480×1	N	C	71	41	
10 58 48		1×60	CH	C	71	41	
11 00 00		480×1	N	C	71	42	
11 04 02		1×60	CH	C	71	41	Banking
11 05 20		480×1	N	C	71	41	
11 09 25		1×60	CH	C	71	41	
11 10 42		480×1	N	C	71	42	
11 14 44		1×60	CH	C	71	41	
11 15 59		480×1	N	C	71	41	
11 20 00		1×60	CH	C	71	41	

Flight: B303

KEY

- Not Fitted
- Fitted, Not Operated
- Duff Data
- Minor Problems
- OK

Thermometers
- Cabin Temperature:
- Heimann:
- Deiced Temp:
- Non-deiced Temp:

Hygrometers
- FWVS:
- General Eastern:
- Johnson Williams:
- Nevzorov:
- Total Water Probe:

Cameras
- Downward Facing:
- Forward Facing:
- Rearward Facing:
- Upward Facing:

Navigation + Aircraft
- Cruciform GPS:
- GIN Applanix:
- INU Honeywell:
- Radar Altimeter:
- RVSM IAS:
- RVSM Static Pressure:
- XR5 GPS:

Report Created 29/08/2007 08:44:46

Misc Core
- AMTG:
- AVAPS:
- Cabin Pressure:
- Fax machine:
- Printer:
- S9 Static Pressure:
- Satcom C:
- Satcom H:
- Turb Centre-Static:
- Turb Left Right:
- Turb Up-Down:
- Turb Horizontal Chk:
- Turb Vertical Chk:
- Weather Radar:

DLUs:
- DLU AERACK:
- DLU BBR Lower:
- DLU BBR Upper:
- DLU Core Chem:
- DLU Core Consoles:
- DLU Port Aft:
- DLU Port Fwd:
- DLU Stbd Fwd:

Radiometers
Lower:
- BBR (clear) Lower:
- BBR (IR) Lower:
- BBR (red) Lower:

Upper:
- BBR (clear) Upper:
- BBR (IR) Upper:
- BBR (red) Upper:

- ARIES:
- DEIMOS:
- IR Camera:
- JNO2 Lower:
- JNO2 Upper:
- JO1D Lower:
- JO1D Upper:
- MARSS:
- SHIMS Lower:
- SHIMS Upper:
- SWS:
- TAFTS:

Last Updated: 02/07/2007 13:34:05

Cloud Probes
- 2DC:
- 2DP:
- FFSSP:
- PCASP:

- ADA:
- CCN:
- CDP:
- CIP 100:
- CIP 25:
- CPI:
- CVI:
- SID1:
- SID2:

Aerosol
- CPC 3025A:
- Filters 47mm:
- Filters 90mm:
- Neph - Dry:
- Neph - Wet:
- PSAP:
- AMS:
- CPC 3025 (AMS)
- INC:
- VACC:
- CPC 3010A (CVI):

Chemistry
- CO Aerolaser 5002:
- NOx TE42C:
- Ozone TE49C:
- Ozone TE49:
- SO2 TE43C:
- TDLAS (NIR) CH4:
- TDLAS (NIR) CO2:

- FAGE:
- Formaldehyde:
- NOxy:
- ORAC:
- PAN:
- PERCA:
- Peroxide:
- PTRMS:
- TDLAS (1C):
- WAS Bags:
- WAS Bottles:

Misc Non-Core
- CASI/ATM:
- LIDAR:
- LTI:
- SAW Hygrometer:

Faults / Incidents Log

Flight No. B303
Date: 29 June 2007

Instruments

1. dry neph relative humidity suspect
2. nevz U/S
3. de iced true temp isn't correct (JimH), possibly relates to true/dewpoint anomaly previously reported
4. Upper IR, signal and zero very noisy – data us. Occasionally
5. Nox until 0845 no NO2 , no flow through ozonator – now self fixed.
6. ffssp overheat problem as B302
7. forward camera & upward camera windows now obscured by dust – unuseable.

Aircraft

Satcom-H Calls

Post Flight - Turb Probe Water Traps

1. Indicate Amount of Water: a) Nil b) 1-2 drops c) ¼ full or more d) Ice present
2. Emptied by:
3. Dried by:

Pre-Flighter's Log

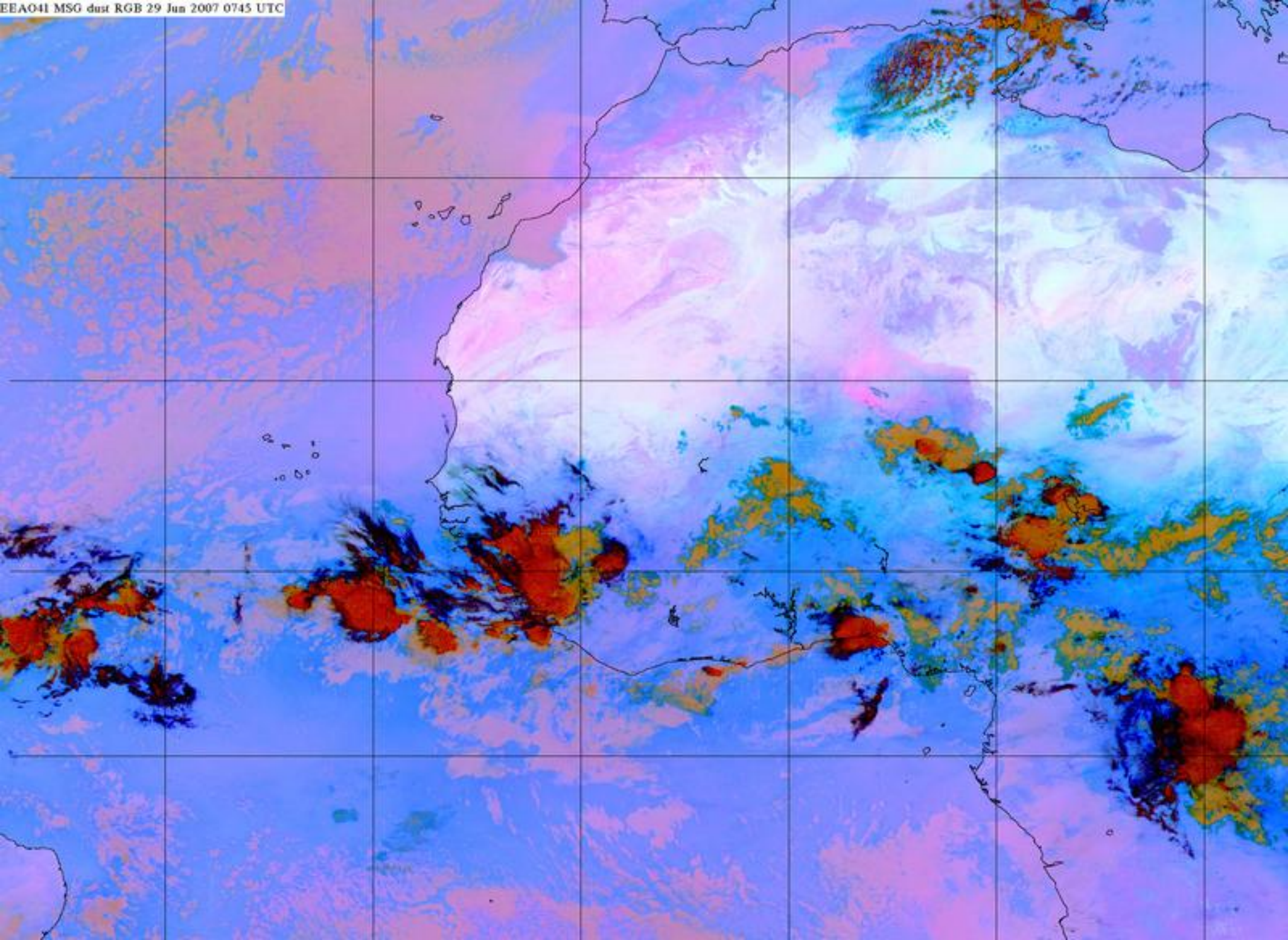
Date: 29/06/07 Flight No: B303 Pre-Flighter: JT

Item	√ or x	Location	Action	Comments
1	x	Hangar	Collect Dustbin, put on a/c	N/A.
		Aircraft Cabin		
2	✓	Core Chemistry	Gases x 3 ON	
3	✓	Cabin	All Racks Checked	
4	✓	Fwd CorCon	All reqd CBs made	
5	✓	Aft CorCon	CBs made, PCs ON	
6	✓	HORACE	Optical Disk loaded	
7	✓	HORACE	Recording data	
8	✓	HORACE	DLU Status Checked	
9	✓	HORACE	HORACE Status Checked	
10	✓	Satcom H	Power LED ON	
11	✓	Nevzorov	Checked and OFF	
12	✓	GPS	Checked	
13	✓	INU	Align	
14	✓	Cameras Pictures	Checked x 4 OK	
15	✓	Core Chemistry	Instruments Checked OK	
16	✓	Core Chemistry	CO Flows Checked OK	
17	x	FWVS	Set up	N/A.
18	✓	Video x 2	Records okay, Rewind	
19	✓	Delced Rosemount	Heater Checked / Set	
20	✓	Heimann	Calibration Checked	
21	✓	TWC	ON & Checked	
22		GE	Balance checked	
23	✓	INU	Navigate then back to Align	
24	✓	Hubs x 4	Checked ON	
25	✓	Fwd Console	Miss. Sci Laptop CB made	& CB on Port Fwd SSP
26	x	CNC	Butanol filled	N/A.
27	✓	CGPS	Set up	ON BUT NOT LOGGING
28	✓	Miss. Sci Laptop	Checked Onboard	
	✓	NOPM Bs		ANDY WILSON

External Checks overleaf →

Pre-Flighter's Log

Item	√ or x	Location	Action	Comments
		External		
29	√	Turb Probe	Clean if reqd, Photo taken	
30	√	JW	Cleaned & Checked	
31	√	DI Rosemount	Cleaned & Checked	
32	√	NDI Rosemount	Cleaned & Checked	
33	X	Nevzorov	Cleaned/windings checked	STRIPPED & RUBBISH
34	√	GE	Cleaned & Checked	
35	√	Lower BBRs	Domes cleaned/checked	
36	√	Camera Windows	Cleaned	
37	√	Heimann	Lens checked OK	
38	√	TWC Cover	Fitted if required	OFF
39	√	All other covers	Removed	
40	X	Dustbin	Returned to hangar	N/A.
41		Tools	Check ALL in Toolkit	
42		Tools	Avalon informed	
		Avalon Checks		Signed
43	√	Upper BBRs Checked & Cleaned		
44	X	ICEX applied		
45	X	Traps empty (weekly only)		


EEAO41 MSG dust RGB 29 Jun 2007 0745 UTC

MISSING LOG SHEETS:

The following log sheets are not available for flight B303:

Log	Reason
Brief	No brief is available for this flight
Cloud Physics Processing	Processing yet to be completed.
Core Chemistry	no In Flight log except in cases of instrument problems
PSAP log	No log as PSAP pump/filter info included on Flight Summary page
Wet Nephelometer	No operator on GERBIL

Document control

Revision	Date	Author	Comments
r0	19 Jan 2008	Doug Anderson	Initial version missing the above noted logs
r1			
r2			

VIDEO RECORDINGS:

3 x Forward Facing Cameras
3 x Downward Facing Cameras

Digital8 video recordings from this flight reside with :

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